

Gracious, how the perspiration rolls off a fellow ! Down between the banks, with an August sun overhead, and the steam arising from the rank vegetation, and the sun's rays reflected from the water, we thought of Ferriss digging snails on the mountain tops, and we quit, but we had at least 100 *Succineas*.

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## SHELL COLLECTING NEAR ROCHESTER, N. Y.

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BY FRANK C. BAKER.

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For the past five years the writer has made annual pilgrimages to Rochester, New York, partly to spend his summer vacation, and partly to get better acquainted with the mollusks which flourish about the "Flower City." The vicinity of Rochester is peculiarly adapted for molluscan life, owing to the fact that the Niagara limestone out-crops in various places, affording an abundance of lime for the secretion of their shells, which are, therefore, large and fine.

The Eskers known as the Pinnacle and Cobb's Hill, are my favorite localities, and many fine species have been collected. The former locality is a rounded, dome-shaped hill some 200 feet in height, the slope being from 10 to 30 degrees, well wooded on its summit, with a little ravine between the main hill and a small knoll, and littered by fallen, rotting logs and dead leaves. Helices are here very abundant, such forms as *Vitrea arborea*, *V. indentata*, *Omphalina fuliginosa*, *Gastrodonta intertexta*, *Pyramidula alternata*, *P. striatella*, *Polygyra albolabris*, *P. sayi* (rare), *P. monodon*, *P. tridentata* (many varieties), and *Cochlicopa lubrica* being readily collected. Cobb's Hill, just across Monroe avenue, yields about the same fauna.

At a point in the Erie Canal where the waters widen to form a pond, hence called "wide-waters," the fresh water mollusks are numerous, and such species as *Limnæa stagnalis* (large and fine), *L. palustris*, *L. catascopium*, *L. desidiosa*, *Planorbis trivolvis*, *Physa heterostrophæ*, *Pleurocera subulare*, *Goniobasis livescens*, *Bythinia tentaculata*, *Valvata sincera*, and *V. tricarinata* are common. Between Rochester and Pittsford, in the canal, a colony of *Vivipara contectoides* has established itself, and a large number of fine specimens may be gathered at any time. When the water is drained from the

canal in the spring, it is a fine place for unios, such species as *Anodonta salmonia*, *A. benedictii*, *Alasmodonta marginata*, *A. deltoidea*, *Unio gibbosus*, *Anodontopsis ferussacianus*, *Quadrula plicata*, *Q. undulata*, *Lampsilis gracilis*, *iris*, *nasutus*, *luteolus*, *ventricosus*, *rectus*, *alatus*, and *cariosus* being found in great abundance and beauty; the bottom is covered knee-deep with black mud, affording a fine retreat for the mussels.

The Genessee River, both above and below the falls, affords good collecting, the unios being abundant above and the gastropods below the falls. The characteristic species above the falls are *Alasmodonta marginata*, *A. rugosa*, *A. pressa*, *Quadrula rubiginosa*, *Lampsilis iris*, *L. luteolus*, *L. alatus*, *Sphærium simile*, *S. stamineum*, *S. transversum*, *Limnæa palustris*, *Planorbis trivolvis*, *Physa heterostrophæ*, *Goniobasis livescens* and *Campeloma decusum*, while those below are *Sphærium transversum*, *Limnæa catascopium*, *Planorbis trivolvis*, *Physa heterostrophæ*, and *Bythinia tentaculata*.

Both the east and west banks of the Genessee River below the falls are good localities for mollusks, about the same species being found as on the Pinnacle, with the addition of *Pupa muscorum*, *Circinaria concava*, *Vallonia pulchella*, *V. costata*, *Polygyra thyroides*, *P. hirsuta* and *P. palliata*. The wooded banks of Seneca Park afford good retreats for mollusks, and they may be found here in great abundance.

One of the pleasantest trips near Rochester is to Irondequoit Bay, an inlet from Lake Ontario, five miles long and about one in breadth. The hills about are from 100 to 200 feet high, and the water has a maximum depth of 80 feet. Mollusks are correspondingly numerous: *Sphærium simile*, *S. transversum*, *Succinea ovalis*, *Limnæa palustris*, *L. desidiosa*, *Planorbis campanulatus*, *P. trivolvis*, *P. bicarinatus*, *P. deflectus*, *P. parvus*, *Segmentina armigera*, *Ancylus tardus*, *Physa heterostrophæ*, *Pleurocera subulure*, *Goniobasis semicarinata*, *Bythinia tentaculata*, *Annicola hystica*, *Valvata sincera* and *V. tricarinata* are found in great abundance along the shore or living on the lily pads. The wooded banks yield the common helices in great abundance.

The best fresh-water beach collecting which the writer has ever experienced is to be found at Charlotte and Summerville, on Lake Ontario, the former on the west and the latter on the east side of the mouth of the Genessee River. There is always a line of "sea-wrack" which is alive with fresh-water mollusks. Here we have

always collected *Lampsilis luteolus*, *Sphærium simile*, *S. stamineum*, *S. fabale*, *Pisidium abditum*, *P. bakeri* (= *P. amnicum* Müll., teste Sterki), *Limnæa palustris*, *L. desidiosa*, *Planorbis campanulatus*, *P. trivolvris*, *P. bicarinatus*, *P. deflectus*, *P. parvus*, *Ancylus parallelus*, *Physa heterostropha*, *Pleurocera subulare*, *Bythinia tentaculata*, *Amnicola limosa*, *A. lustrica*, *A. obtusa*, *A. cincinatisensis*, *Gillia altilis*, *Somatogyrus subglobosus*, *Valvata sincera*, *V. tricarinata* and *V. obtusa*. *Pisidium bakeri* Pilsbry has been found in great abundance at Summerville, where specimens nearly a quarter of an inch in length have been collected. *Valvata obtusa* Drap. was found at both Charlotte and Summerville in 1899 fully as abundant as *V. sincera*! This species was reported from this country for the first time in 1897, when but a few specimens were obtained. In the interval between that time and August, 1899, it had increased a hundred fold. It is probable that many introduced species will be found in our Great Lakes if the shore debris be carefully searched.

The localities mentioned above have yielded altogether 150 species, many of which may be found here in as great abundance and perfection as at any locality in the northern part of the United States.

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#### NOTES AND NEWS.

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A NEW AMERICAN SLUG.—Dr. J. F. Babor has described an interesting new form, *Ariolimax steindachneri*, from a specimen collected by F. Steindachner on Puget Sound, in 1874.<sup>1</sup> It is large, length 80 mm., breadth 19, height 21 mm., about the size of *Ariolimax columbianus*, and differs externally from that species in having the well developed tail pore an open slit, as in *Hesperarion*, not plugged as in the other *Ariolimaxes*. The teeth are as in *A. californicus*. The genitalia lie free, the ovotestis anterior, at the stomach. The penis contains a large papilla but is otherwise hollow, much as in *Hesperarion*. There is no appendiculum, and no "retensor" muscle, but a vaginal retractor is developed.

The species is clearly intermediate to some extent between *Hesperarion* and *Ariolimax*, and may indicate that the former group

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<sup>1</sup> *Annales des K. K. Naturhist. Hofmuseums*, xv, 1900, p. 95.